TECHNICAL BOOK REVIEW INDEX

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ANTHONY A. MARTIN, *Editor*

Volume 26 **March, 1960** **No. 3**

THE purpose of the Technical Book Review Index is primarily to identify reviews in current scientific, technical, and trade journals; secondarily, when feasible, to quote from these reviews. In the evaluation of scientific and technical books, reviews constitute the best existing source of information. The service of the Technical Book Review Index is thus in the field of evaluation, rather than in competition with existing publications which announce new and forthcoming books, list books by subjects, or supply bibliographic information. Each quotation immediately follows the name of the journal from which it is taken. Obviously, these brief extracts, detached from the context, must not be accepted as conclusive. Except for the correction of obvious errors, the bibliographic information is as given in the reviews. It is, therefore, in many cases incomplete and in some cases probably inaccurate.

Alders, Lucas.

Liquid-liquid extraction. Ed.2. 209p. 1959. Van Nostrand, Princeton, N. J., $8.50.

Chemical & process engineering, Jan. 1960, p.37. 1 col.

"In scope, the book remains essentially the same but the contents, particularly the chapters on single-solvent countercurrent extraction, two-solvent countercurrent extraction, and reflux in extraction processes, have been changed considerably. The theory dealt with in these chapters is now based on a new method of calculation developed recently by Mr. J. Groot Wassink in close co-operation with the author. A number of other improvements have been introduced . . . Although the book is primarily a practical one, the theory behind the practice is not neglected . . . A survey is given of the principal extraction procedures, and the merits and demerits of each of the processes are discussed . . . Many of the formulae are new and have not yet been published elsewhere."

I/EC, Feb. 1960. p.89 A. 2½ col.

"The book, in general, fills a definite need for a laboratory manual on liquid extraction. The ordinary technician may initially be bewildered by the mathematics in some sections, but the derivations are meticulously developed so that they require only a basic knowledge of algebra. Alders has written this book for the laboratory chemist who will be required to determine the basic design data after the process has been established. By restricting the field, he has produced a thoroughly comprehensive treatise . . . In spite of the absence of the chemical engineering approach, the book should help the chemical engineer familiarize himself with all the techniques and problems of the laboratory chemist." *E. G. Scheibel.*

Allan, D. H. W.

Statistical quality control. 129p. Reinhold, New York, $3.50.

Tool engineer, Feb. 1960, p.194. ⅛ col.

"This brief little book presents statistically quality control to management to help determine its value to their operation. The subject is treated competently in broad and nonmathematical terms. Since it is both brief and easy to read, the book is a handy tool for anyone who wishes to learn something about the objectives, concepts, and methods of statistical quality control."

Alperin, Morton, & Sutton, G. P., ed.

Advanced propulsion systems. 237p. 1959. Pergamon, New York, $6.

Canadian chemical processing, Jan. 1960, p.103. ⅛ col.

"Contains the unclassified and just declassified papers presented at the First Advanced Propulsion Systems Symposium sponsored by the Air Force Office of Scientific Research and by the Rocketdyne Division of North American Aviation Inc . . . Many new and imaginative concepts of physical propulsion, power sources and new propellants, hardware, and human hazards of space flight are explored in the light of present knowledge and scientific predicted conjecture."

Atkins, Hedley J. B.

Tools of biological research. 183p. 1959. Blackwell, Oxford, England, 37s. 6d.

New scientist, Jan 21, 1960, p.150. ⅔ col.

"Originated in a symposium arranged by the Surgical Research Society in order to enlighten its members on modern methods, consequently there is a pronounced medical bias in the choice of 'tools' discussed. The book generally gives the principles on which a technique depends, together with sufficient practical details to enable a biologist contemplating using the technique to assess the problems involved . . . The book as a whole should serve to widen the biologist's knowledge of modern techniques." *J. E. Pascoe.*

Averbach, B. L., and others, ed.
Fracture; proceedings of an international conference on the atomic mechanisms of fracture. 646p. 1959. Wiley, New York, $17.50.

Design news, Jan. 18, 1960, p.164. 6 l.

"Concerned with the question of what actually occurs on an atomic scale when materials fracture. Current theories and experiments are critically considered for cleavage, ductile, fatigue and high-temperature mechanisms of fracture for metals, ceramics and polymers."

Beer, Stafford.
Cybernetics and management. 214p. 1959. English Universities, Kent, England, 25s.

New scientist, Jan. 7, 1960, p.48. 1⅝ col.

"An admirable account of the relation that exists between cybernetics and the problems of management in industry. The book, we can say straightaway, is an exciting one and covers a range of applications that have not previously been dealt with in print . . . This book is one that no scientist or industrialist can afford to miss, and it is up to him to disentangle the matters of purely academic interest from those of practical importance—both are there and it is too early yet for any of us to say for certain in which class they may ultimately fall." *F. H. George.*

The Times science review, Spring 1960, p.18. ⅛ col.

"This is a difficult but interesting book. Mr. Beer's thesis is that machines of kinds that learn, look for correlations, take account of possibilities, and 'amplify intelligence' are near enough to being practical to be a possible source of the 'radical new advance' which he considers that industry needs. He thinks in terms of principles and writes persuasively. What is not easy to decide from his book is how much that could be done in principle could be made practical, and at what cost in development."

Benesovsky, F., ed.
Plansee proceedings, 1958; high-melting-point metals. 1959. Pergamon, New York, 83s. 6d.

Foundry trade journal, Jan. 28, 1960, p.116. ⅝ col.

"The papers . . . are in English, French or German, and are divided into six parts. The first part consists of four papers on various aspects of sintering and the theory of high-melting-point materials. The second and third parts deal respectively with various problems in the metallurgy of tungsten . . . and molybdenum . . . Part four is devoted to ten papers on niobium and tantalum . . . Three papers on rhenium and osmium form section five, and three papers devoted to metal/metal-oxide materials are included as section six . . . Of considerable interest to the specialist in high-temperature resistant materials, and is well illustrated. The general reader will, however, inevitably find it difficult to obtain a coherent picture of the subject from the collected papers of a symposium." *B. B. Argent.*

Bershader, Daniel, ed.
Magnetodynamics of conducting fields. 145p. 1959. Stanford Univ. Press, Stanford, Calif., $4.50.

Journal of applied physics, Feb. 1960, p.446. ⅛ col.

"The third volume of a series stemming from the Lockheed Symposia on Magnetohydrodynamics. The seven papers included here were presented at the Symposium in November, 1958. The volume, therefore, represents a concise summary of the state of this branch of fluid mechanics at that time. The papers are mostly theoretical, the single exception being the contribution of Fishman, Lothrop, Patrick, and Petschek, which presents the results of shock-tube experiments. The theoretical studies are concerned with existence and stability, wave propagation, and steady and unsteady flows of both perfect and imperfect conductors in various idealized geometries."

Bird, R., and others
Textbook on fundamental chemical engineering operations. 455p. 1959. Chapman & H., London, 72s.

Chemical age, Jan. 9, 1960, p.86. ⅜ col.

"There are numerous errors in some of the mathematical steps . . . [and] the authors are at pains to admit to them, while asserting that the present publication is a 'preliminary edition' of a textbook to be completed in the future . . . Essentially a theoretical text upon the fundamentals of chemical engineering operations, but a great deal of thought and ingenuity has been put into its presentation. Although the treatment is, quite properly, principally mathematical it is so rational as to repay study even by those whose student days are long passed." *T. K. Ross.*

Blumenstock, David I.
Ocean of air. 457p. 1959. Rutgers Univ. Press, New Brunswick, N. J., $6.75.

American forests, Jan. 1960, p.64. 2 col.

"The sum-total of our new knowledge [of the atmosphere]—or at least enough of the total to satisfy all but the most expert professionals—has been packed into . . . [this] fat, heavy, handsome book . . . Part One, 'The Ocean of Air: Its Physical Order,' is slow reading . . . But this is essential knowledge for what is to follow, and careful reading here pays big dividends in the next sections. Part Two, 'The Ocean of Air: Observation, Prediction, Control,' has a fine chapter on what we laymen consider the hopeless task of weather forecasting . . . Part Three, 'Man and the Ocean of Air,' was for me the part for which the rest was made. In six tightly conceived, excellently written chapters, Blumenstock sums up the influence of the ocean of air upon us humans, upon our world and our affairs." *Monroe Bush.*

Brewster, Ray Q., & McEwen, W. E.
Organic chemistry; a brief course. Ed.2. 401p. 1959. Prentice-Hall, Englewood Cliffs, N. J., $10.

American gas journal, Feb. 1960, p.14. ¼ col.

"Includes new material and has been rearranged so that the properties of aliphatic and aromatic compounds are presented in an inte-

grated manner. Introductory chapter studies methyl and ethyl alcohols, whose simple transformations clearly reveal the important relationships existing among several families of carbon compounds. Thereafter, various classes of hydrocarbons and their derivatives are presented in logical order. Illustrative materials have been brought up-to-date; an enlarged list of questions and problems is provided at the end of each chapter with the answers in the appendix."

Soil science, Feb. 1960, p.115. ½ col.

"The authors . . . have completely rewritten and rearranged the material of the first edition. They stress principles, and develop, though gradually, the electronic theory. They develop and diagram the usual groups of compounds . . . Questions accompany each chapter, with answers at the back of the book. The foreword and each of the 21 chapters is introduced by a photograph of a famous chemist associated with the development of some phase of the subject . . . Will serve admirably as an introductory outline of organic chemistry for a one-semester course."

Bush, Robert R., & **Estes,** W. K., ed.
Studies in mathematical learning theory. 432p. 1959. Stanford Univ. Press, Stanford, Calif., $11.50.

Science, Jan. 22, 1960, p.221. ½ col.

"This collection of papers grew out of a summer institute on the applications of mathematics to social science research . . . To all but a small group of initiates (and one wonders whether this group is very much larger than the group of authors themselves) many of these papers will be somewhat mystifying. Nevertheless, for anyone interested in applying mathematics to psychology or in finding out what mathematical psychologists are doing, this book is worthy of careful study." *Kenneth O. May.*

Caidin, Martin.
War for the moon. 258p. 1959. Dutton, New York, $4.95.

Astronautics, Feb. 1960, p.98. ¾ col.

"Perhaps the pace is beginning to tell on the author, now turning out books at the rate of almost half a dozen a year, but this latest effort is not one of Caidin's outstanding successes. The book is devoted largely to detailed (and sometimes rambling and discursive) descriptions of AF and Army lunar probe attempts, supplemented by some background on the problem and on the moon itself . . . Outstanding in the book are the illustrations, and there are lots of them . . . The intriguing title and illustrations are likely to win the author some new readers among laymen, but there is little here to interest the specialist in the field." *I. H.*

Chace, William G., & **Moore,** H. K., ed.
Exploding wires. 373p. 1959. Plenun Press Inc., 227 W. 17th St., New York, $9.50.

Electronic industries, Jan. 1960, p.52. ¼ col.

"This significant monograph on exploding wires is the first to be published in any language . . . Not only records . . . [the Conference on Exploding Wires Phenomenon], but fills a large gap in the literature on this subject . . . Will prove extremely useful to all workers in the field of high speed photography, shockwave, and thermonuclear research. . . . Will also prove useful to students, technologists, and scientists concerned with the fluid physics field."

Charlton, T. M.
Energy principles in applied statics. 112p. 1959. Blackie, Glasgow, 25s.

Commonwealth engineer, Jan. 5, 1960, p.40. ½ col.

"Nature and uses of the several energy principles of applied statics are explained by the author, and examples given of different methods that can be used in establishing equations of equilibrium of statically-indeterminate structures. In an introductory chapter, three energy quantities are mentioned—potential energy, strain energy, and complementary energy. Subsequent chapters discuss in detail the use of the various energy methods in establishing conditions of equilibrium in statical systems . . . The principle of virtual work . . . is discussed in Chapter 4 as a means of deriving conditions of equilibrium . . . The final chapter considers the concepts of stiffness and flexibility of linear systems and their properties."

Engineering materials and design, Feb. 1960, p.110. ⅛ col.

"This useful book explains lucidly the background of strain energy problems and clarifies some of the confusion which tends to exist in this branch of applied statics. A fairly comprehensive knowledge of calculus is necessary to follow the text in detail, but the book does explain very well the conditions of equilibrium, examples of strain energy and potential energy methods, principles of virtual work and complimentary energy, these being the titles of a few of the seven chapters."

Engineers' digest, Feb. 1960, p.30. ⅛ col.

"The object . . . is . . . to remove some of the confusion existing with regard to the uses of the various energy principles of applied statics. As a result, the two basic approaches to the analysis of statical systems are considered explicity and, in addition to clarifying energy principles, an appreciation of the duality aspect in analysis is obtained by readers."

Cohen, I. Bernard.
Birth of a new physics. 200p. 1960. Doubleday, Garden City, N. Y., $1.10 net. (Science study series.)

Science, Jan. 22, 1960, p.219. 3⅜ col. including other reviews.

"Traces the development of mechanics from the Greeks to Newton. To the physicist (although certainly not to the historian), this would seem to be a limited subject. However, this limitation permits Cohen to study the specific problem in more depth than is possible in the usual physics course, to show the interrelations between physical theory and other branches of knowledge, and to illustrate the way in which science constantly changes . . . A student who reads Cohen's book carefully will gain valuable perspective on the way in which scientific ideas develop." *Howard Laster.*

Dampier, M. See **Dampier,** William C., & **Dampier,** M., ed.

Dampier, William C., & Dampier, M., ed.
Readings in the literature of science. 275p. 1959. Harper, New York, $1.50 unbound.

Product engineering, Feb. 15, 1960, p.106. ⅛ col.

"A classic collection of extracts from the writings of 40-odd of the world's greatest scientists, whose work has been a primary force in the shaping of our present-day world. The selections were chosen and arranged to indicate the growth and development of scientific thinking in three main fields: the structure of the universe, the nature of matter, the evolution of life. This is the kind of book that can entice one into spending many fascinated hours, tracing with its pioneering authors the paths their work and their genius led them to travel. One cannot help wondering what led the Dampiers to exclude almost entirely the field of mathematics. *J. K.*

Davies, Robert, ed.
Friction and wear; proceedings of the symposium, Detroit, 1957, 191p. 1959. Van Nostrand, Princeton, N. J., $5.50.

Engineer, Jan. 22, 1960, p.132. 3½ col.

"A collection of nine separate lectures. The contributors have been so well chosen, however, and the quality of the individual papers is so high that, on this occasion, the work as a whole may be considered to be more valuable than the sum of the parts so that the discerning reader will be able to obtain a clear concept of the subject as a whole. The newcomer to the subject will, however, have to read the whole of the nine lectures and then rearrange the information he has gleaned in a different order to achieve this appreciation. . . Taken as a whole, the volume represents a considerable step forward in understanding certain processes of wear. It is to be regretted, however, that it contains no treatment of wear due to the presence of foreign abrasives."

Dennen, William H.
Principles of mineralogy, 429p. 1959. Ronald, New York, $7.50.

Earth science, Feb. 1960, p.8. ⅔ col.

"Designed to serve as a text for an introductory college course . . . Rather than follow the traditional approach of studying the properties, appearance, uses, occurrence, and techniques of identification of individual minerals, the author has chosen to present his subject as a study of the fundamental geometrical, chemical, and physical relationships of all matter . . . Mineral and subject indices and a table of atomic parameters are included. Nearly 200 excellent line drawings show the molecular and crystalline structure of minerals."

DeWitt, C., ed.
The many body problem. 675p. 1959. Wiley, New York, $15.

American journal of physics, Feb. 1960, p.168. 1⅓ col.

"In the summer of 1958 many of the high priests and some of the principal acolytes of the many-body problem lectured at the French summer school of theoretical physics at Les Houches. These lectures have been assembled into a book which fully and authoritatively answers the need for a review. The book, except for its price and handsome binding, is frankly a collected set of lecture notes. It is printed in France is a sort of mimeograph style . . . The lectures themselves vary greatly in thoroughness, level of presentation, content density, and degree of detail . . . The book fills a very important need. It does so fully, with authority, and in detail. It is the best book on the many-body problem we have, and it may well stay best when its rivals appear." *R. D. Amado.*

Philosophical magazine, Nov. 1959, p.1290. ⅓ p.

"May be the only complete account of this new branch of quantum theory, outside of the original papers which are difficult and confusing. The actual contributions are of varying style and substance . . . The reader is advised to start with the two admirable chapters by Brueckner, which give a clear general guide to the theory and its results, then to study the chapters by Hugenholtz, Beliaev, Bohm, and Huang, where the various formal techniques are set out, and finally to read the other sections were [sic] the special properties of nuclear matter, of electrons in metals (including superconductivity) and of liquid Helium, are discussed separately in detail." *J. M. Z.*

Donkin, Charles T. B.
Elementary practical hydraulics of flow in pipes. 213p. 1959. Oxford, New York, $3.40.

Transactions of the Institute of Marine Engineers, Dec. 1959, *supplement,* p.vii. ⅓ col.

"The first section . . . covers the basic theory involved when considering water at rest, water in motion, the significance of Reynolds number and flow through orifices and weirs. This data has been presented in a clear and concise manner and should prove useful in instances where general information is required. The major section . . . covers in detail the flow of water in pipes and demonstrates clearly how some of the problems inherent in this type of work may be overcome . . . Should be most helpful not only to engineering offices dealing in pipework but also designers specializing in this subject . . . Presented in a sound manner, employing reasonably simple mathematics throughout, thus retaining the interest of all."

Duecker, Werner W., & West, J. R., ed.
Manufacture of sulfuric acid. 515p. 1959. Reinhold, New York, $12.50. (American Chemical Society. Monograph series, no. 144.)

Canadian chemical processing, Jan. 1960, p.103. ⅓ col.

"Twenty-four specialists provide thorough up-to-date descriptions of the modern sulfur burning contact plant and its modifications for other raw materials in this new monograph. It is the only current treatment of sulfuric acid manufacture as practiced in the U.S. In addition, the book presents significant information on present-day economics; industry trends; minimizing air pollution; health and safety measures; and handling, storing and shipping."

Edmondson, W. T. See Ward, Henry Baldwin, & Whipple, G. C.

Ellis, R. Hobart, jr.
Nuclear technology for engineers. 284p. 1959. McGraw, New York, $9.50.

Nucleonics, Feb. 1960, p.108, 110. 1 col.

"Not intended for chemists or physicists. But industrial firms that have interest in atomic energy could properly place this on the shelves of patent attorneys, managers and others who need some acquaintance with the subject . . . Can be useful for introductory study at college level for those who do not intend to delve more deeply into atomic and nuclear physics. However, it seems to have been particularly intended for engineers who need 'nonacademic' introduction before going to more special interests in nuclear energy." *V. L. Parsegian.*

Product engineering, Jan. 18, 1960, p.76. 10 l.

"A basic text, suitable for college courses, and incorporating many of the standard diagrams . . . Can serve as a brush-up for those who know 'a little' but want a little more on a specific point . . . Written primarily for those interested in radiation and its applications, since relatively little attention is paid to reactors and chain reactions."

Ernst, Walter.
Oil hydraulic power and its industrial applications. 466p. 1960. McGraw, New York, $12.50.

Machine design, Feb. 18, 1960, p.277. ⅛ col.

"Generation, utilization, transmission, control, and applications of oil hydraulic power are general areas of discussion. Basics of fluid mechanics, component and circuit design, and information on equipment, operation, and maintenance are covered. This second edition includes new materials on petroleum-base and synthetic hydraulic fluids, hydrodynamic effects in rotating fluids, hydrostatic bearings, pump noise and vibration, and servomechanisms."

Tooling & production magazine, Feb. 1960, p.96. ¼ col.

"Covers the field from the theory of fluid mechanics through component and circuit design, to hints for operation and maintenance of equipment. Each stage of the hydraulic system is discussed, including the generation of power by rotary pumps, its use in motors, its control, and its transmission. Systems for standard and automatic control of machine tools and other hydraulically actuated units are also covered."

Estes, W. K. See Bush, Robert R., & Estes, W. K., ed.

Feather, Norman.
Introduction to the physics of mass, length and time. 358p. 1959. Edinburgh Univ. Press, Edinburgh, 18s.

New scientist, Jan. 21, 1960, p.158. 1⅗ col.

"The book is emphatically what the author describes himself as 'a carefully told story, starting at the beginning', and, moreover, the story is not only carefully but clearly told. If a criticism is to be made, it is that, while principles are explained, practical measurements, of great importance for physicists, are neglected . . . What the author has in view is to trace the development of the broad principles that govern the measurements of mass, length and time and of the physical quantities directly expressible in terms of them, and this has been done admirably, in a way that will stimulate the general interest and broaden the mind of the youthful reader." *E. N. da C. Andrade.*

Feodosiev, V. I., & Siniarev, G. B.
Introduction to rocket technology; translated from the Russian by S. N. Samburoff. 344p. 1959. Academic Press, New York, $9.50.

Aero/space engineering, Feb. 1960, p.100. ¼ col.

"The authors have undertaken the task of introducing the reader to the general subject of rocket technology without demanding of him extensive preparation, especially in the sophisticated fields of aero-gas-dynamics and thermodynamics; they consider that a general background in the elements of physics, chemistry, and the fundamentals of higher mathematics is quite sufficient for adequate understanding. Nor do they touch upon the military uses of rockets or the many specialized subjects of rocket technology, having an independent character, such as radio control, guidance, and telemetering."

Astronautics, Feb. 1960, p.98. ⅞ col.

"This is indeed a strange book. Sporting a photo of a Bomarc on the jacket, it appears with no indication as to when it was published in the U.S.S.R.; with photos of U.S. missiles casually inserted into the text and no reference made as to whether or not similar photos were used in the Russian edition; with some ghastly errors in transliteration from the original text which indicate that the translator has little background in the subject . . .; and with the metric physical units used in the Russian text converted for some strange reason to the foot-pound-second system in all chapters except those dealing with chemistry. The result is a product which is neither fish nor fowl . . . A mish-mash which adds little or nothing to the already overflowing library of basic publications on the subject."

Fink, Donald, & Lutyens, D. M.
Physics of television. 160p. 1960. Doubleday, Garden City, N. Y., $1.10 net. (Science study series.)

Science, Jan. 22, 1960, p.219. 3⅗ col. including other reviews.

"Not a handbook for the repair of television sets, but, as its title indicates, is primarily concerned with the physical principles involved in television . . . Begins with a brief discussion of communication . . . Then gives a lucid, careful review of the physics of light and electricity. Atomic theory, solid state physics, and the wave-particle duality of light and matter are discussed . . . Given this background, the reader examines the problem of turning 'light into electricity and back again.' The components of a television camera, a transmitter, a receiver, and a television set are examined. The main emphasis is always put on the physical principles underlying each component and the function each component performs." *Howard Laster.*

Technology review, Jan. 1960, p.24. 1⅗ col.

"Those who skip the foreword and seek details of television circuitry, or who hope to ac-

quire sufficient mastery of sync and blanking circuits to circumvent visits of a television technician when the receiver needs repairs are sure to be disappointed; this volume is not for them. But those who have a good comprehension of physics at the high school level and who desire an understanding of the basis on which television systems operate will find this an interesting, informative, and authoritative book . . . Is the volume too difficult for use by interested high school students? This reviewer feels definitely that it is not." *B. Dudley.*

Firsoff, V. A.

Strange world of the moon. 236p. 1960. Basic Bks., New York, $6.

New scientist, Jan. 28, 1960, p.221. ⅛ col.

"Semi-technical book which delves somewhat beyond convention and lays emphasis on certain outstanding problems of the lunar surface . . . Mr. Firsoff . . . [suggests] that there is an accumulation of water *beneath* the Moon's surface. The book is not all speculative; some useful factual chapters lead the author to explain the effects which this water may have on the surface, and he examines the relationships between the surface and the rarefied atmosphere of the Moon. There are occasional inaccuracies in the physics . . . but these do not spoil the subsequent discussions . . . This controversial book is full of new and interesting ideas and, because of this, it is strongly to be recommended to all students of the Moon." *G. Fielder.*

Flügge, S., ed.

Handbuch der Physik. v.38. pt.2. 868p. 1959. Springer, Berlin, DM 178.

Nuclear instruments & methods, Dec. 1959, p.103. 1 col.

"The section on neutron physics ('The production and slowing down of neutrons') occupies the major part of the volume, 659 out of the 817 pages of text. For this section the publisher has succeeded in securing the cooperation of a man, whose name is closely linked with neutron physics form [sic] its very early days, Edoardo Amaldi . . . Although the work is perhaps not suitable as an introductory text, it is extremely readable also for persons, whose interests lie on the practical side. The second section . . . by U. Fano, L. V. Spencer and M. J. Berger, bears the title 'Penetration and Diffusion of X-rays' . . . Throughout the entire volume the theoretical presentations are interwoven with experimental results, which gives the reader a clear understanding of the present status of any one problem." *E. Sokolowski.*

Flügge, S., ed.

Handbuch der Physik. v. 44: Nuclear instrumentation, I. 473p. 1959. Springer, Berlin, DM 125.

Nuclear instruments & methods, Dec. 1959, p.103. ⅜ col.

"The latest volume . . . has been given the title 'Nuclear Instrumentation I' but could more adequately have been called Accelerator Techniques . . . Contains eight separate sections written by wellknown experts, each section treating in great detail one special type of particle accelerator . . . Each chapter is well illustrated and contains a comprehensive bibliography. The contributions were written at the end of 1957 which means that some of the most recent achievements are not incorporated . . . Will be of great interest to all those who want to penetrate into calculations on a special type of accelerator or need information on recent development in accelerator techniques." *K. G. Malmfors.*

Science, Jan. 29, 1960, p.295. 1⅛ col.

"The articles contained here describe the major pieces of nuclear physics instrumentation, the heavy machines most commonly associated with modern experimental physics. One does not blindly set out to build devices such as are described in these eight articles, and as a consequence, the most interested reader will already be familiar with the general theoretical discussions presented here. It is the specific comments about specific machines that make these articles most lively; the lore of machine building is well represented in this volume . . . These articles will be of great use to those who wish to be brought up to date on machines with which they are not well acquainted." *John D. Fox.*

Gage, J. C., and others, ed.

Methods for the determination of toxic substances in air. 73p. 1959. Butterworth & Co., London, 30s. unbound.

Industrial chemist, Jan. 1960, p.48. ¼ col.

"Published under the auspices of the Toxicology and Industrial Hygiene Division of the International Union of Pure and Applied Chemistry. After an introduction dealing with the general principles of atmospheric analysis, collection of the air sample, etc., it contains methods for the determination of 21 toxic substances. Produced as a series of loose leaves, space has been allowed in the binder for supplements which will be issued from time to time . . . These supplements will give methods for additional substances and will amend where necessary methods already recommended."

Journal of the Royal Institute of Chemistry, Feb. 1960, p.67. 1 col.

"In my opinion, 30*s.* is a high price for such a small book which at present comprises about 70 pages of script together with table of contents and title page in a Manilla loose-leaf pillar file . . . It is difficult to comment upon the list of substances which appear, but carbon monoxide, methane, arsine and hydrocarbon vapours (petroleum products) are all absent and, in view of the fact that tests for these substances are among those most commonly applied in practice, it is to be hoped that the omissions are only very temporary." *G. V. James.*

Gantmacher, F. R.

Applications of the theory of matrices; translated and revised by J. L. Brenner and others. 317p. 1959. Interscience Publishers, New York, $9.

Science, Feb. 12, 1959, p.405. ⅝ col.

"There are today many fine books in English on the theory of matrices. Few of them, however, treat applications of the theory in more than an incidental manner. A book of the caliber of the present one is, therefore, a valuable addition to the bookshelf of the analyst, applied mathematician, or physicist, for it contains sophisticated and elegant treatments of several topics which ultimately require matrix analysis . . . Cannot be recommended too high-

ly, for it contains material otherwise unavailable in book form. One could wish that material on infinite matrices were included, but this lack does not detract from the stature of Gantmacher's book as an exposition on finite matrices. The translation is a good one, but there are several misprints which are easily spotted." *George Weiss.*

Garner, Louis E., jr.

Pin point transistor troubles in 12 minutes. 478p. Coyne, Chicago, $5.95 unbound.

Electrical South, Jan. 1960, p.87. ½ col.

"Mr. Garner presents an entirely new technique for trouble shooting on all types of transistorized equipment. Using the Coyne Pin Point-Check Chart method, so successfully applied in three previous books, the author offers the fastest tested system for the location of troubles in radios, TV sets, Hi-Fi, hearing aids, and practically all types of hybrid and commercial equipment using transistors. Forty-five manufacturers cooperated in furnishing data on their commercial equipment for this book. Schematics and special service data are included . . .Over 1,200 subjects are listed in the index with more than twice as many cross references for additional data on the subjects."

Geissman, T. A.

Principles of organic chemistry. 635p. 1959. Freeman, San Francisco, $7.

Nature, Jan. 16, 1960, p.131. ⅔ col.

"An elementary text-book of organic chemistry which includes most of the material required by a first-year university student, but which has its emphasis on important functional groups and on general types of organic reactions . . . The presentation and printing . . . are both good, except that some of the diagrams of molecular models are confusing and that a few errors in formulæ may be misleading to students. Perhaps the allocation of space to various topics is a little unbalanced. For example, more room is given to aromatic electrophilic substitution than to stereochemistry. Nevertheless, this book can be enthusiastically recommended as an interesting and stimulating introduction to organic chemistry." *C. B. Reese.*

Godfrey, Derrick E. R.

Theoretical elasticity and plasticity for engineers. 311p. 1959. Thames, London, 42s.

Research applied in industry, Jan. 1960, p.40. ¾ col.

"This is a somewhat unusual book. Its title may suggest that it is a formal treatise, but in fact this is not so and its aim appears to be rather to fill in gaps in the knowledge of the graduate engineer than to present him with a coherent picture of fundamentals. For this reason it is not suitable as a primary text book for those students who are unfamiliar with the elements of this important field of study, but it could be valuable to the graduate engineering scientist who must consolidate and supplement his acquaintance with the subject in order to tackle successfully some novel problem in research or development . . . Clearly written and well printed and illustrated." *L. J. Kastner.*

Grabbe, Eugene M., and others, ed.

Handbook of automation, computation, and control. 3v. v.2: Computers and data processing. 1070p. 1959. Wiley, New York, $17.50.

British communications & electronics, March 1960, p.212. ⅞ col.

"The preface rather prejudices the work by overclaiming. The editors have made a valiant first attempt to coherently and comprehensively cover their subject. They have produced an excellent *encyclopedia* which will be of great value to those who are not computer specialists . . . The idiosynchratic information, so vital to those practising an art, is manifestly absent in places. So although the volume will have its uses to a computer expert, it is unlikely to become a programmers' or designers' 'Bible' in its present form." *P. Huggins.*

Electronic industries, Jan. 1960, p.52. ⅓ col.

"Directed toward the problem solvers—the engineers, scientists, technicians, managers, and others from all walks of life who are concerned with applying technology to the mushrooming development in automatic equipment and systems. The authors have gathered together in one place the available theory and information on general mathematics, feedback control, computers, data processing, and systems design. Emphasis has been on practical methods of applying theory, new techniques and components, and the ever broadening roll [sic] of the electron computer . . . Assumes some engineering training and will serve as an information source and refresher for practicing engineers."

Magazine of standards, Jan. 1960, p.25. 1 col.

"Consists of six parts A to F, and a total of 31 chapters contributed by 41 experts in their respective fields. Part A deals with computer terminology and symbols . . . Part B is devoted to digital computer programming and Part C to the use of digital computers and data processors. Part D deals with the design of digital computers and Part E with the design and application of analog computers. Part F is concerned with unusual computer systems . . . Will serve as an excellent source of information for practicing engineers . . . Will provide management with background material for understanding modern techniques of importance to business and industry." *S. P. Kaidanovsky.*

New scientist, Feb. 4, 1960, p.284. 1 col.

"To make a 'Handbook' in the classical sense, the editors should cut down the verbiage to about one-third of what it now is, and then re-expand the book by treating the subject in far more detail. The contributors should not only give a list of interesting references, but should summarize the more important of them with a mass of details and formulae in small print—but of course the labour content of such a book would be many times higher! As it is, the book may serve as an extremely up-to-date (thought diffuse) introduction to the subject." *Richard Steel.*

Gruner, Paul.

Das Walzen von Hohlkörpern und Kalibrieren von Werkzeugen zur Herstellung Nahtloser Rohre. Springer, Berlin, DM 52.50.

Engineer, Jan. 29, 1960, p.170. ⅓ col.

"Beginning with a survey of general roll pass design, the author discusses the principal rolling faults and the design of drawing dies and pilzer rolls. These chapters are followed by the main sections which are concerned with the production of tubes of large diameter by radial rolling methods and the various skew rolling processes for making seamless tubes from solid billets. The physical principles of reducing rolling, skew rolling and levelling are discussed in detail, and a final mathematical section gives the derivation of the stress formulæ which occur."

Hähnel, Kurt.

Flachstrickerei. 272p. 1959. Fachbuchverlag, Leipzig, Germany, DM 2.50.

Journal of the Textile Institute, Dec. 1959, p.P781. ½ p.

"Deals exclusively with flat-bed knitting machines, and as would be expected from its title, straight-bar knitting machines of the Cotton's Patent type are not included. There is no mention either of the flat-bed purl machines . . . The author has devoted a third of the book . . . to the description of the principles of stitch formation and construction of the hand-operated flat-bed knitting machines. The remaining two-thirds are devoted to a detailed description of some power-driven flat-bed machines built in Karl-Marx-Stadt, East Germany . . . The clarity of the diagrams and drawings . . . is very good considering the poor quality of the paper . . . Should . . . be of interest to all knitting technologists and mechanics." *L. A. Telesz.*

Hamilton, J.

Theory of elementary particles. 482p. 1959. Oxford, New York, $12. (International series of monographs on physics.)

Nature, Jan. 23, 1960, p.200. ⅝ col.

"A book that tells you how to do the standard calculations about elementary particles using the techniques that have been evolved since the War. It is therefore an extremely useful book and will be of the greatest practical value, particularly as a very thorough and general introduction for theoretical students . . . A book for which a great need has been felt for many years, and it satisfies that need. The writing is of considerable clarity, and it will not be merely the theoretical student who profits by the use of this work . . . Basically a book to be learnt from and to be used rather than one purporting to summarize the state of play. It will be widely appreciated." *D. H. Wilkinson.*

Physics today, Jan. 1960, p.62. ⅝ col.

"Dr. Hamilton has included much more phenomenology than is usually found in books of this kind. There is a lot of discussion of angular correlations and a long chapter on polarization. This is all to the good. Indeed this part might have stood alone as a slimmer and cheaper volume without the simple treatment of field theory up to dispersion relations that is added to it . . . The topics discussed . . . change at times with a rapidity that the beginner may find bewildering. A little more artificial separation and streamlining might have been an advantage. It is a pity that the Oxford physical monographs are not more pleasant to look at." *J. C. Polkinghorne.*

Hamilton, J. Roland

Using electricity on the farm. 397p. 1959. Prentice-Hall, Englewood Cliffs, N. J., $6.65.

Agricultural engineering, Jan. 1960, p.59. ⅛ col.

"Consists of six problem-units dealing with the following phases of farm electricity: (1) Opportunities in using electricity to improve the farm; (2) common everyday principles of electricity for the farm; (3) farmstead wiring; (4) electric motors for the farm; (5) water pumps and lighting for the farm; and (6) electric farming equipment . . . A simplified reference and how-to-do-it guide for agriculture students, club workers, and farm people and is built largely around practical ideas for using electricity to improve the farm, with instructions on how to plan and do each major job. The illustrations and simplified examples . . . make it easy to read and understand."

Hardin, Garrett.

Nature and man's fate. /375p. 1959. Rinehart, New York, $6.

Nature, Jan. 9, 1960, p.65. ⅜ col.

"In general, the historical and factual part of Hardin's book is remarkably good, mainly because of the interesting and often novel anecdotes and reminiscences which the author produces to support the theories and philosophies of the leading *personalia.* When Hardin begins to speculate, however, he adopts the overbearing attitude so typical of those who see the world devoid of any shade of grey . . . It is a pity that the author has spoilt what might have been a good book with over-protestation. 'Nature and Man's Fate' should bring him much publicity but little credit." *T. H. Hawkins.*

Science, Feb. 5, 1960, p.347. 1¼ col.

"One of the best accounts yet written of the evolution of the theory of evolution and, as such, reflects the expenditure of much time and scholastic effort. Inevitably it is concerned more with genetics and selection than with the aspects of either nature or the fate of man. Genes, in fact, dominate the theme, and as a lively, vivid, and informative presentation for the general reader of the nature and importance of genes to the present and future well-being of man. Hardin's book is excellent and could hardly be better." *N. J. Berrill.*

Haynes, Williams.

Brimstone—the stone that burns. 308p. 1959. Van Nostrand, Princeton, N. J., $7.

Chemistry in Canada, Jan. 1960, p.77. ⅛ col.

"Tells the story of the American sulphur industry, from the earliest pioneering days, right up to today's important new sulphur recovery developments in France and Canada. The author knew many of the sulphur pioneers and has filled his narrative with vivid detail of first-hand recollections . . . A valuable and interesting history of one of the country's vital industries."

Herrmann, Robert H., ed.
How to design and buy investment castings. 176p. Investment Casting Inst., 27 E. Monroe St., Chicago, $3.95.

American machinist/metalworking manufacturing, Feb. 22, 1960, p.224. ⅜ col.

"The title . . . understates the case somewhat because it is actually a fairly complete survey of the investment-casting technique; reasons, advantages, methods, materials, quality control, designing, and purchasing. Although the book is smallish in size, it covers the subject in good depth and with near-handbook thoroughness . . . A valuable book on the subject . . . All the fundamentals are covered, and enough detail to give the reader a good working knowledge." *O. D. E.*

Product engineering, Feb. 15, 1960, p.112, 116. ½ col.

"Includes selection of materials and design as well as detailed descriptions of the different techniques that are prevalent in the industry . . . Represents the experience of a number of producers . . . Unfortunately this type of compilation by agreement does not show the best that any individual producer can do. Instead the compromise is usually the one that gives the most leeway for the industry as a whole. Best tolerances as given here can be considerably tighter if one takes the trouble to survey the field. Nevertheless, the book contains valuable design data and, therefore, is a good buy."

Holden, Alan, & Singer, P.
Crystals and crystal growing. 320p. 1960. Doubleday, Garden City, N. Y., $1.45. (Science study series.)

Science, Jan. 22, 1960, p.219. 3⅝ col. including other reviews.

"A fascinating discussion of the strange ways in which solids form, an excellent hobby book describing ways of growing crystals, and a lucid, penetrating introduction to solid state physics . . . Can be read on any of these levels, or, ideally, on all . . . Should prove a delight to all readers. The chemist, the future solid state physicist, the rock gardener, and the ordinarily curious reader will find much that is satisfying in this book." *Howard Laster.*

Hurd, W. Joyce.
Adhesive guide. 140p. 1959. British Scientific Instrument Research Assoc., 'Sira', Southill, Chislehurst, Kent, England. 20s. (B.S.I.R.A. research report, M39.)

British plastics, Jan. 1960, p.40. 1 col.

"This handy reference book has been compiled to provide an indication of the types of adhesives available for bonding various materials in their several applications. As is admitted in the introduction, if the book were comprehensive it would be unwieldly and it depends, in the main, on technical literature supplied by adhesives manufacturers. Nevertheless, a very useful job has been well done and there will be many people grateful for the book's existence." *D. Ray Newton.*

Jander, Gerhart, & Wendt, H.
Lehrbuch der Analytischen und Praparativen Anorganischen Chemie. Ed.3. 421p. 1959. Hirzel, Stuttgart, Germany, DM 2[illegible].

Analytical chemistry, Feb. 1960, p.57 A. ⅝ col.

"Distinguished from previous editions largely with regard to classification and range of material. At the same time, the effort has been made to refrain from making it a specialized work and to retain the original objective of facilitating an introduction to inorganic chemistry and its problems . . . In broad outline, the book is divided into five parts. These include an introduction and sections on theoretical foundations, general fundamentals of work methods, analyses and preparations. Diagrams are given where necessary, and there are 24 photographs of crystals plus reproductions in color of the spectra of several of the elements."

Jenness, Robert, & Patton, S.
Principles of dairy chemistry. 446p. 1959. Wiley, New York, $8.75.

Agricultural engineering, Jan. 1960, p.59. ⅛ col.

"The main emphasis . . . is directed toward understanding the nature of milk—the chemistry of milk constituents—the interaction of constituents with one another under various conditions—and the relationship of all these facts to the production and storage of dairy products. Also included are descriptions of how to perform anlyses and tests on milk, milk constituents and milk products. The authors explain the physical-chemical principles involved and the various merits and limitations of such procedures. One chapter deals with the nutrition of milk."

Agricultural Institute review, Jan.-Feb. 1960, p.35. ⅛ col.

"The authors' aim has been to integrate the widely scattered data in the dairy field with basic principles of chemistry in a textbook suitable for instruction of the undergraduate student in dairy science. In the opinion of the reviewers, their aim has been admirably achieved . . . [Some] minor defects [that appear] do not seriously affect the opinion that the authors have done an excellent job of selecting and presenting current knowledge of dairy chemistry in a stimulating manner." *W. A. McGugan & R. R. Riel.*

Journal of dairy science, Feb. 1960, p.300. ⅜ col.

"Definitely aimed at the advanced undergraduate who possesses a fair background in chemistry. A rather thorough discussion is given those areas in which our knowledge is reasonably well established. The student will benefit particularly from the numerous instances in which very logical interpretations of facts and theories are presented . . . A useful addition to the library of any dairy or food technologist." *Joseph Tobias.*

Journal of the American Oil Chemists' Society, Feb. 1960, p.24. ½ col.

"This book can best be defined as an excellent compendium on the chemistry of milk. In its 13 chapters the authors discuss the chemistry of milk constituents, emphasizing the basic composition, structure, and properties of milk as well as the chemistry of changes occurring during processing. The editors are to be congratulated

for the skill with which they have presented the newer findings . . . To those, who like the reviewer, desire a technical book dealing with a particular branch of science and embracing in condensed and accurate form essential information and interpretation of dairy chemistry, this book is a welcomed addition." *Irving I. Rusoff.*

King, Cuchlaine, A. M.
Beaches and coasts. 403p. 1959. E. Arnold, London, 65s.

New scientist, Jan. 14, 1960, p.103. 1 col.

"Consists largely of summaries of the results of researches on waves and coastal processes; and great lengths of references testify to the extent of Dr. King's reading. Because the research effort devoted to waves and coastal engineering has been recently growing so fast, the references are mainly to work completed in the last few years. In addition some experiments are described for which no references are given, and the writer assumes that these are experiments carried out by the author herself and described here for the first time . . . The writer takes pleasure in reviewing so useful and satisfactory a book and can thoroughly recommend it." *R. C. H. Russell.*

Kirchmayer, Leon K.
Economic control of interconnected systems. 207p. 1959. Wiley, New York, $12.50.

Consulting engineer (New York), Feb. 1960, p.226. ⅝ col.

"Designed as a companion volume to the author's earlier book, *Economic Operation of Power Systems* . . . Its complete dependence on the first book is a major fault. Also, any consultant who is looking for data on the use of Diakoptics, as is promised in the publisher's blurb, is sent once again to the reference shelves. However, with adequate reference material available, this is a competent text for use as a course in systems engineering at a graduate level, which was its original intent."

Electronic industries, Feb. 1960, p.56. 9 l.

"This book has as its primary thesis the treatment of mathematical methods, computers, and controllers to obtain the optimum economic operation of interconnected electric utilities systems. The theories and application featured represent pioneering applications of optimalizing computer control in continuous process industry."

Kline, Morris.
Mathematics and the physical world. 482p. 1959. Crowell, New York, $6.

School science and mathematics, Feb. 1960, p.167. ⅞ p.

"The reviewer was very pleased with the first portion . . . although in spots the mathematical derivations seemed unduly prolonged and somewhat tedious. This was considered excusable if the book is addressed to the individual with small mathematical background. As the calculus is introduced (not always with complete rigor) and the development went farther into what might be termed advanced mathematics, the feeling developed that here is an attempt to present a major portion of mathematics in a single volume . . . Interesting reading, [and] teachers and students alike could profit from many portions. Perhaps here is a case where the young reader might have some guidance in his reading, rather than be turned loose with the book without any comments or suggestions." *Cecil B. Read.*

Kohnke, Helmut, & Bertrand, A. R.
Soil conservation. 298p. 1959. McGraw, New York, $6.75.

Agricultural engineering, Jan. 1960, p.59. ⅛ col.

"Purpose . . . [is] to provide a clear picture of the fundamental nature and cause of soil erosion, of the aims of soil conservation, and of the methods of saving the soil and maintaining its productivity; that it is not the purpose . . . to give recipes for soil management, but to help the reader to understand the soil and what happens to it under various forms of land use, so that he, himself, can work out the solution of any soil-conservation problem . . . Written primarily as a college text [but] should be of interest to those concerned with land use problems, especially farm management specialists, county agents, and soil conservation personnel."

Soil science, Feb. 1960, p.114. ⅝ col.

"The authors . . . present a picture of the nature and causes of soil erosion and of the aims and the methods employed in preventing it . . . The material is presented in relatively simple and easily readable form, and is well illustrated by graphs, drawings, and photographs. Long lists of references are appended to most chapters. The chapter on farm planning, and, perhaps, that on land management, might well have been expanded."

Kotel'nikov, V. A.
Theory of optimum noise immunity; translated from the Russian by R. A. Silverman. 140p. 1959. McGraw, New York, $7.50.

Electronic industries, Feb. 1960, p.56. ⅜ col.

"The author's approach is always that of a practical engineer. He invokes only the most elementary notions of probability theory; the steps in his analysis are easy to follow; and his primary intention is to establish the behavior of communications systems at a level that is of practical use to the engineer. The development is also notable for its lack of dependence on advanced mathematics. The reader who is passingly familiar with Fourier series, discrete and continuous probabilities and probability densities (simple, joint, and conditional), and the notion of statistical independence will have no trouble with the material."

Kuethe, A. M., & Schetzer, J. D.
Foundations of aerodynamics. Ed.2, revised. 446p. 1959. Wiley, New York, $11.75.

Aero/space engineering, Feb. 1960, p.99. ¼ col.

"Extensively revised to include some of the important topics on which recent technological advances are based. The chapter on energy relations has been rewritten, and the treatment of one-dimensional compressible flows has been expanded to include sections on heat addition.

The material on wings in compressible flow is now presented from the point of view of lifting surface theory. A major revision of the material on viscous fluids greatly expands the discussion of compressibility in both laminar and turbulent flow . . . In addition to these major changes, new problems and graphical material have been added, and all charts and tables have been grouped together in the back of the book for convenience in problem solving."

Lake, Philip.
Physical geography. Ed.4 483p. 1959. Cambridge, New York $4.

Geophysics, Feb. 1960, p.338. ½ p.

"The fourth edition of a rather comprehensive text-book of physical geography. The subject matter is not of direct interest for the geophysicist. However, the book makes a good general reference volume, at the Junior College level, on the processes acting on the earth's surface . . . The last three chapters are new additions to the fourth edition . . . The physiographical effects of storms are emphasized with examples of recent storms in England, showing how effectively physical processes are speeded up at such times. The other two chapters attempt to relate the physical and biological aspects of geography . . . One deals with soils and the link they made between the study of land forms and ecology; the other describes marine life in relation to its physical environment." *Roberto Sarmiento.*

Landes, Kenneth K.
Petroleum geology. Ed.2. 443p. 1959. Wiley, New York, $9.50.

Earth science, Feb. 1960, p.8. ⅔ col.

"The author has found it necessary to rewrite up to seventy-five percent of the contents comprising the original publication. The greater portion of the new edition deals with modern theories of the origin and evolution of oil and gas, rocks which contain oil and gas, associated fluids in the reservoirs, the migration of hydrocarbons through the rocks, and the various types of traps in which commercial deposits occur . . . The first two chapters acquaint the reader with the background of professional petroleum geology . . . Chapters three and four discuss techniques employed by the petroleum geologist. The remainder . . . is concerned with the geologic occurrence of petroleum . . . Even the non-technical reader will find this an extremely interesting and readable book."

Leontovich, M. A. ed.
Plasma physics and the problem of controlled thermonuclear reactions; translated by J. B. Sykes. 4v. v.3. 422p. 1959. Pergamon, New York, $24.

Philosophical magazine, Nov. 1959, p.1291. ⅔ p.

"Russian work on controlled thermonuclear reactions started in 1951. This is the third of four volumes describing progress up to the time of the 1958 Geneva Conference and it consists mainly of work done in the three years 1955 to 1957. Many of the papers have not appeared in English before and Pergamon Press and the translator, J. B. Sykes, are to be congratulated on presenting them to a wider public. Most of the papers in this volume are theoretical but they cover a wide range of subjects." *R. J. T.*

Lewis, J., & Wilkins, R. G., ed.
Modern coordination chemistry. 487p. Interscience Publishers, New York.

The Times science review, Spring 1960, p.18. 10 l.

"The combination of chemical theory with new, largely physical, methods of investigation which is a characteristic of modern chemistry has led to greatly increased interest in chemical complexes. This book, to which eight authors contribute, has been so planned as to cover systematically the different approaches and methods that are made use of, and the editors have been unusually successful in securing uniformity of presentation."

Ley, Bernard J., and others.
Linear circuit analysis. 567p. 1959. McGraw, New York, $12.50.

British communications & electronics, March 1960, p.212. ⅔ col.

"One of the most useful features of the present volume is that it provides a reasonably rigorous and eminently readable account of the fundamental theory of linear networks . . . Should prove of value to the circuit engineer who wishes to be really conversant with the mathematical methods used in circuit analysis . . . Should also be a valuable reference for the teacher of circuit theory who is interested in acquiring a sound background as an aid to presenting elementary theory." *J. Brown.*

Electrical design news, Feb. 1960, p.79. ½ col.

"[The authors] have written this text, at the advanced undergraduate or beginning graduate level, for both power and communications engineering students . . . Because of the unbiased approach to the electrical/electronic field, this text would probably be of interest to graduate students in the field of physics as well as electrics and it can be recommended to majors in the field of mathematics who wish to increase their knowledge of these fields. A large number of problems follow each chapter and for the most part, these problems are of a practical nature."

Electrical journal, Feb. 19, 1960, p.513. ⅞ col.

"Thoroughly competent, but at the same time does not make stimulating reading. It is rather long for the amount of material covered . . . One obtains the impression of unnecessary material . . . Not a brilliant, ground-breaking book; it is not meant to be. What it does, it does well but it is not a very good purchase for a student. On the other hand, it will be valuable background material for lectures, and a worthwhile addition to libraries." *G. S. B.*

Product engineering, Feb. 15, 1960, p.109. ½ col.

"This book—intended as a text for a course in linear, lumped-constant circuit theory—is for upperclass undergraduate and first-year graduate students. Chapter 1 discusses formulation of circuit integrodifferential equations. Chapter 2 discusses topology and matrix techniques—useful in the formulating of circuit equations. The remaining chapters cover steady-

state solution; transient solution; mechanical, thermal and acoustical analogs; Fourier series; Laplace transformation; and transform networks."

Lion, Kurt S.

Instrumentation in scientific research; electrical input transducers. 324p. 1959. McGraw, New York, $9.50.

Aero/space engineering, March 1960, p.113. ⅛ col.

"The purpose . . . is to offer research workers, engineers, and students a reasonably complete collection of the existing basic methods and systems used as input transducers in electrical instrumentation; to serve as a reference book which will minimize literature search; and to provide information on particular methods, as well as criteria by which the relative merits of existing methods and systems may be evaluated. The level of presentation is chosen for those who have a moderate knowledge of physics and mathematics. The physics of each method has been given preference over the technical means. Mathematical derivations are omitted; where the derivation is not obvious, it may be found in the references."

Product engineering, Feb. 8, 1960, p.73. ⅜ col.

"A general summary of the many devices, techniques and principles important to sensing and indicating temperatures, magnetic fields, force, and other electrical, mechanical, thermal and radiation phenomena . . . Covers theory, performance and construction of the numerous transducer elements or methods available, including: resistive, inductive, capacitive, and ultrasonic systems; radiation thickness gages; thermal displacement; piezoelectric; ionization, mechanic-optical . . . and numerous others."

Lyon, Duane.

Basic metrical photogrammetry. 475p. 1959. St. Louis, $4.

Photogrammetric engineering, Dec. 1959, p.792. ⅛ col.

"A college-type book dealing with fundamental principals [sic] of photogrammetry. The diagrams and explanations are very clear . . . Typewritten, but the reproduction of text, illustrations, and plates is very good. The chapter on photogrammetric instruments is especially complete, covering instruments of U. S. and foreign manufacture. A considerable amount of information is included . . . for a very low price . . . Should become very popular with beginning students of photogrammetry and those who wish to review basic information." *C. E. Cook.*

Marinaccio, Anthony.

Exploring the graphic arts. Ed.2. 320p. 1959. Van Nostrand, Princeton, N. J., $6.

Graphic arts monthly, Jan. 1960, p.150. ⅜ col.

"Long recognized as an outstanding guide to the techniques of printing and its related arts . . . [this book] has now been completely revised to include the very latest developments in graphic arts materials and methods. Every chapter has been brought completely up-to-date, and throughout the book new drawings and photographs have been added . . . A practical book, Exploring the Graphic Arts emphasizes actual working procedures; and to illustrate these techniques there is an abundance of excellent drawings, showing step-by-step sequences. Modern mechanical processes based on the simpler hand techniques are then shown in photographs, together with samples of printing. An excellent index and bibliography add to the value of this unique work."

Mark, David.

R-L-C components handbook. 146p. 1959. John F. Rider, New York, $3.50 unbound.

Radio-electronics, Feb. 1960, p.154. ⅛ col.

"There are many different kinds [of capacitors], and for any given application one kind is best. The same holds for resistors and inductors. This book describes the characteristics and applications of R, L and C components, including thermistors and transformers. Temperature effects, tolerance and color codes are discussed. This book will help you make the correct replacement in every circuit." *I. Q.*

Markus, John.

Handbook of electronic control circuits. 347p. 1959. McGraw, New York, $8.50.

Electrical South, Jan. 1960, p.89. ⅜ col.

"This comprehensive compilation gives industrial electronic and design engineers a selected reference to over 250 electronic circuits, each complete with values of components. From it can be obtained the salient points of a number of circuits of a given type as a guide for choosing the most promising circuit for a particular application . . . Each discussion covers a circuit based on equipment now in actual operation. Thus the practical usefulness of any circuit being considered for adaptation has already been proved . . . Extends but does not duplicate the material in . . . two earlier volumes, *Handbook of Industrial Electronic Circuits* and *Handbook of Industrial Electronic Control Circuits,* by Markus and Zeluff."

Moore, H. K. See Chace, William G., & Moore, H. K., ed.

Mysels, Karol J.

Introduction to colloid chemistry. 475p. 1959. Interscience Publishers, New York, $10.

Rubber age, Jan. 1960, p.710. ⅜ col.

"Addressed to beginning graduate students for use in a one-term introductory course, but should prove just as valuable to industrial chemists or executives who desire a concise survey of a field they may have neglected in their academic careers. The simple presentation, developing the subject from basic to fairly complex principles, presupposes only a grasp of physics and physical chemistry . . . A mastery of the subject as presented here should give a basis for understanding the main considerations involved in most practical problems . . . Also a good preparation for delving into a more advanced treatment of the whole field or of special topics."

Neff, Hans.

Grundlagen und Anwendung der Röntgen - Feinstruktur - Analyse. 447p. 1959. Oldenbourg, Munich, Germany, DM 73.

Journal of the Institute of Metals, Nov. 1959, *metallurgical abstracts,* p.223. ½ col.

"This excellent book sets out to give a general introduction to X-ray crystallography and to be of practical day-to-day usefulness to the research worker, both industrial and academic. It succeeds well in most respects . . . The principles of X-ray physics, of crystallography, and of diffraction are clearly presented, and the inclusion (to a relatively full and up-to-date extent) of counter diffractometry is an especially attractive feature. The newer techniques, their advantages, sources of error, and limitations are well brought out, with fair references. The entire emphasis . . . is, however, given to the powder method, and single-crystal procedures and their uses are almost neglected." *H. J. Goldschmidt.*

Negre, Jean.

Le soudage electrique par resistance. Ed.3. 432p. Publications de la Soudre Autogene, 39 Rue d'Amsterdam, Paris, 2100 fr.

Welding journal, Jan. 1960, p.92. ⅛ col.

"The first four parts . . . cover the theory and principles of resistance welding, spot, seam, and butt welding. The fifth part deals with assembly of parts and weldability. Some new examples have been added to the fifth part, and new developments, such as three-phase and low-frequency power, are discussed . . . Intended for both plant and laboratory personnel."

Nett, Roger & Hetzler, S. A.

Introduction to electronic data processing. 287p. 1959. Free Press, Glencoe, Ill., $6.75.

Electrical manufacturing, Feb. 1960, p.172. ⅝ col.

"Although this book has been prepared, according to the publisher's description, for 'those who will have to decide whether or not to adopt computers for their research organization, business or government agency,' it will also prove interesting and useful reading for those who are interested in the principles of operation without wishing to be distracted by lengthy discussion of details which are of importance only to the mathematician and computer engineer. Basic principles of computer operation are clearly presented and terminology and symbolism is well-defined . . . This reviewer regrets, however, that the publisher has not given some thought to providing the reader with some means to keep this book up-to-date (at least for a short time) in this fast-moving field." *A. M. H.*

Oliphant, C. P.

Printed circuit diagnosis made easy. 65p. 1959. Sams, Indianapolis, $1.

Electrical South, Jan. 1960, p.88. ¼ col.

"Written specifically to help solve the many problems service technicians face when they service printed circuits in television and radio chassis, this book stresses the diagnosing process . . . Tells how to pinpoint the trouble area and discover the defective component quickly . . . Describes the best procedures to follow when only a schematic diagram is available, and . . . tells the correct way to interpret and use the various styles of service literature available . . . Will help the technician to service all types of printed board chassis in all types of equipment."

Olszak, W., ed.

Non-homogeneity in elasticity and plasticity. 528p. 1960. Pergamon, New York, $15.

Product engineering, Feb. 15, 1960, p.106, 109. ¼ col.

"Of primary interest to engineers concerned with mechanics of solids, this book is a source of up-to-date information on the problems connected with non-homogeneity of mechanical properties of solids and structural elements. The contents include 52 theoretical and experimental papers prepared by 59 international specialists for the symposium in Warsaw organized by the International Union of Theoretical and Applied Mechanics in cooperation with the Polish Academy of Sciences. Main subject categories are: elasticity, plasticity, rheology, dynamics and wave propagation, and statistical and micro-homogeneity. Forty-two of the papers are in English, eight in French, and two in German."

Palmer, L. S.

Man's journey through time; a first step in physical and cultural anthropochronology. 184p. 1959. Philosophical Library, New York, $10.

Science, Jan. 22, 1960, p.220. 2⅔ col.

"The author, a physicist, has set for himself the commendable but formidable task of precisely measuring the rate of man's physical and cultural development through geological time . . . The blithe certainty frequently exhibited by L. S. Palmer is scarcely exhibited by professionals . . . Palmer clearly fails to recognize that most of the existing fragments of man's biological and cultural history cannot be measured by other than hazy, ill-defined parameters. Estimation of evolutionary rates is, of course, a legitimate procedure, but only when the material justifies it." *William L. Straus, jr.*

Paradise, R. S., & Church, G. A.

Problems in strength of materials. 278p. 1959. Blackie, Glasgow, 25s.

Commonwealth engineer, Jan. 5, 1960, p.41. ⅛ col.

"About 360 problems involving strength of materials, some with fully worked solutions, others with answers only, have been collected by the authors to form this book. The problems are taken from London University and engineering institution examinations and are intended to cover requirements in the subject up to and including the final year for the degree in engineering. Graphical or semi-graphical methods of solution have been largely used,

in preference to analytical methods. The authors feel that the former method often provides a more rapid solution with less likelihood of arithmetical errors."

Engineering materials and design, Feb. 1960, p.110. ⅛ col.

"As the title suggests, this book does not follow the now almost traditional layout, but sets down a problem and proceeds to give the necessary detailed working, bringing in the various theorems as they become applicable. While this tends to relate theory to practice which is very desirable, and rarely fulfilled, it must remain a matter of opinion whether the problems selected are representative. There is little doubt that in this approach the student is given a sense of reality, and therefore as a text-book it is a worthy addition, but there are inevitably shortcomings when it is used as a reference."

Postley, John A.

Computers and people; business activity in the new world of data processing. 251p. 1960. McGraw, New York, $6.

Electrical South, Jan. 1960, p.89. ⅜ col.

"Gives a realistic picture of electronic devices that can lead to entirely fresh techniques of business operation and control. Mr. Postley provides a clear discussion of the economics of computers and explains equipment in terms that can readily be grasped by non-specialists. Compromises that the data processing specialist must make in behalf of the organization he serves are described, as well as the decision-making aspects of computers and changes that must be made by business to utilize data processing more effectively."

Quick, Lelande, & **Leiper,** H.

Gemcraft; how to cut and polish gemstones. 181p. 1959. Chilton, Philadelphia, $7.50.

Jewelers' circular-keystone, Feb. 1960, p.100. 1½ col.

"A complete course in one book. The basic fundamentals—what gems are and where they can be found—are given first. Then the text covers cutting, beginning with sawing and cabochon making and going on to the more critical faceting techniques. The equipment and its uses are explained. The authors anticipate the difficulties the beginner will encounter and discuss them in detail . . . Illustrations are excellent, the book is well made, and it can be highly recommended for content."

Rackham, Thomas.

Astronomical photography at the telescope. 231p. 1959. Macmillan, New York, $7.50.

Sky and telescope, Feb. 1960, p.241. 2 col.

"Mr. Rackham's work is surely a welcome addition. On the whole it is authoritative and explicit. He begins with a discussion of subjects within the reach of amateur cameras, giving briefly the characteristics of each object and an idea of what can be expected from the reader's labor . . . Confined to solar, lunar, and planetary work, together with certain deep-sky subjects, such as nebulae and clusters. The recommendations for equipment, exposures, and films are generally those for solar system objects, and will be of value particularly to lunar and planetary observers. The best feature . . . is that it is written by an amateur exclusively for amateurs." *George T. Keene.*

Reinfeld, Nyles.

Production control. 339p. 1959. Prentice-Hall, Englewood Cliffs, N. J., $8.

Tooling & production magazine, Feb. 1960, p.99. ⅛ col.

"Up-to-date ideas from 500 leading companies are incorporated in this book, which covers every phase of production control. The meaning, scope, standards, and objectives of production control are discussed and related to other management functions. Methods of forecasting, planning, and scheduling are presented along with techniques for follow-up and control. Paperwork procedures and tools such as mathematical programming are also covered . . . A practical and flexible guide for solving production control problems."

Reynolds, Charles E.

Examples of the design of reinforced concrete buildings. Ed.2. Concrete, London, $13.

Engineering and contract record, Jan. 1960, p.150 ½ col.

"The first part deals with design and includes more than sixty design tables. The second part gives details of the design of a typical multiple-story building . . . Among the new matter are revised bending-moment factors; the load-factor method applied to the design of beams, slabs, and columns subjected to bending; concentrated loads on slabs spanning in one or in two directions; and flat-slab floors as parts of a frame. The method of moment-distribution applied to continuous beams, the design of load-carrying walls, stairs, and some types of foundations are included."

Richmond, Donald E.

Calculus with analytic geometry. 458p. 1959. Addison-Wesley, Reading, Mass., $8.75.

Machine design, Feb. 4, 1960, p.209. 9 l.

"Since no knowledge of trigonometry or analytic geometry is presupposed, early chapters include fundamentals such as functions and graphs, derivatives, and area under a curve. Later chapters are devoted to integration, differential equations, vectors, partial derivatives, and series."

Rousselot, Robert H.

Repartition du potentiel et du courant dans les electrolytes. 85p. 1959. Dunod, Paris, 980 fr.

Journal of the Electrochemical Society, Feb. 1960, p.40C. ⅜ col.

"[The author] has achieved an introductory treatment that is both concise and easily readable. The fundamental concepts, and the experimental determination of potential and current distribution, are emphasized . . . While this book should prove useful, primarily to the

electroplater, it does not obviate the need for a more comprehensive chapter on current distribution in electrochemistry. The latter must include current distribution on the surface of a corroding metal and around capillary tips used in electrode polarization measurements. Perhaps the author will consider expanding his treatment along these lines in a second edition." *S. Barnartt.*

Safar, Peter, & McMahon, M. C.

Resuscitation of the unconscious victim; a manual for rescue breathing. 79p. 1959. C. C. Thomas, Springfield, Ill., $1.75 unbound.

American journal of nursing, March 1960, p.402. ⅛ col.

"How do you recognize asphyxia? Why is the mouth-to-mouth method of artificial respiration and its variations better than the manual methods? How are the mouth-to-mouth methods carried out? These and other questions are answered in the . . . pages of this handy manual. Both text and illustrations are clear and readily understood."

National safety news, Feb. 1960, p.58. ¼ col.

"Written primarily for those actively concerned with application and teaching of first aid, the publication also affords interesting and valuable information for those interested in this subject who do not teach it. Techniques described . . . are limited to getting lifesaving air into unconscious persons whose air passages are obstructed or who have stopped breathing. The authors hope this manual will aid in the understanding of asphyxia and that the technical details described will be of practical value in future application and teaching of resuscitation." *C. H. Hoch.*

Sams, (Howard W.) & Company, Incorporated.

Basic electricity and an introduction to electronics. 176p. 1959. The Company, Indianapolis, $3.60.

Electrical South, Jan. 1960, p.89. ½ col.

"This new reference-text has been specifically designed for instructional use in secondary schools, vocational-technical programs, technical and trade institutions. However, service technicians and hobbyists will find this volume an invaluable aid for the self-study of electricity and electronics. It is a complete basic text . . . The material . . . has been organized under the supervision of the Sams educational division so that it may be easily scheduled for various types of classes. A complete instructor's manual with suggested time schedules, answer keys, and teaching suggestions is available."

Schaller, Gilbert S.

Engineering manufacturing methods. Ed.2. 682p. 1959. McGraw, New York, $9.50.

Modern castings, Feb. 1960, p.106. 11 l.

"Divided into five sections: (1) Materials in Manufacturing, (2) Foundry Technology, (3) Metal Forming and Treating, (4) Machining, and (5) Welding. The foundry section covers new developments, techniques and equipment ranging from melting to casting cleaning . . . Particularly aimed at helping engineers translate a design or concept into an acceptable end product at a profit."

Tool engineer, Feb. 1960, p.194. ½ col.

"Greatly revised from the first edition which was published in 1953, this new text demonstrates the effect technological change [has had] on the manufacturing engineer's job. As the battery of methods, tools, and techniques at the disposal of the manufacturing engineer is increased, he can accomplish more. However, his job becomes more complex, and he is required to learn more. Prof. Schaller's book will provide a valuable assist to tool and manufacturing engineers . . . The second edition exceeds the first . . . by about 70 pages and includes new information on automation, nucleonics, and a full new chapter on numerical control."

Schlossmacher, K.

Edelsteine und Perlen. Ed.2, revised. 340p. 1959. Schweitzerbart, Stuttgart, Germany, DM 30.

Economic geology, Jan.-Feb. 1960, p.208. ⅛ p.

"Divided into three parts: (1) General information including crystal structure, properties of precious stones, optical properties and methods, and instruments for examining them; (2) descriptions of the various gem-stones giving their properties, occurrence, origin, imitations, notable examples and prices; (3) applied lapidary, including cutting, polishing, and engraving . . . The first edition was neither a textbook nor a popular account. This edition stresses more the scientific phases to make it suitable for a text and reference. Many deficiencies of the earlier edition have been eliminated or revised . . . Several, but not all, of the deficiencies pointed out in a review of the first edition have been corrected. The book is now much more dependable and usable."

Schmidt, Karl Rudolf.

Nutzenergie aus Atomkernen. v.1. 592p. 1959. Walter de Gruyter, Berlin, DM 106.

Chemical & process engineering, Jan. 1960, p.35, 37. ⅔ col.

"The author . . . a physicist with wide experience in the design of boilers and steam-raising plant, has excellent qualifications for writing a work of such wide content and scope. The chemist, the chemical engineer, the physicist, and the metallurgist—each will find something new in his own field, and get to know and appreciate the problems of his colleagues . . . Not a specialist work, but is aimed at supplying the nuclear specialist with a broad survey of the various fields involved in the technology of nuclear power production . . . It may be argued that an index in Vol. 2 is sufficient, but Vol. 1 is such an invaluable book in its own right that a separate index would be justifiable . . . Can be recommended as an invaluable addition to the library of every nuclear scientist."

Schönfeldt, N.

Oberflächenaktive Anlagerungsprodukte des Athylenoxyds. 452p. 1959.

Wissenschaftliche Verlagsgesellschaft, Stuttgart, Germany, DM 68.

Journal of the American Oil Chemists' Society, Jan. 1960, p.26. ½ col.

"In this monograph the very comprehensive literature concerning ethylene oxide and its derivatives is collected in one volume. Included is the large group of commercially important surfactants made with ethylene oxide as an intermediate . . . Schonfeldt's monograph is of greatest value to those concerned with surfactants. This very large field is well-organized. The fact that some material is treated repetitiously is probably unavoidable if pertinent facts are to be presented under different headings. Sufficient consideration is given to the theoretical aspects of ethylene oxide adducts to make this volume of interest to those engaged in academic or industrial research." *Hans Wolff.*

Schure, Alexander, ed.

Magnetism and electromagnetism. 78p. 1959. John F. Rider, New York, $1.80 unbound.

Electronic technician, Jan. 1960, p.79. ⅛ col.

"The technical approach, admittedly a fundamental one, is comprehensive enough to render service as a foundation for further studies. Most trade schools slough off this topic, especially typical calculations, leaving students without a sure knowledge of it. The simple mathematical treatment offered by this book should correct the situation."

Selwood, P. W.

General chemistry. Ed.3. 661p. 1959. Holt, New York, $6.95.

Journal of chemical education, Jan. 1960, p.53. ⅛ col.

"Contains a number of notable changes from previous issues. The first part . . . has been rather extensively recast, giving a smoother introduction. A larger print and more attractive styling is used, with all illustrations redone and enlarged . . . To this reviewer, clarity of presentation is one of the strongest points . . . Easy to read, the illustrations are excellent, sample problems in the sections involving stoichiometry are well-planned and ample exercises are provided at the end of each chapter . . . Users of the Selwood text will find this is not just a token revision but one in which many improvements have been made." *N. W. Gregory.*

Semple, J. G., & Kneebone, G. T.

Algebraic curves. 361p. 1959. Oxford Univ. Press, London, 45s.

New scientist, Jan. 14, 1960, p.103. ⅔ col.

"The present exposition . . . is timely in that, while it is firmly based on algebraic foundations, with strict regard to modern standards of rigour, it never loses sight of the fact that the subject is basically geometrical, and the general theorems which are proved are illustrated by a wealth of particular examples placed at the ends of the various chapters. The result is a book which is modern in outlook, but which, unlike some modern works on the subject, does not give the impression that the classical accounts of the subject have been completely superseded; the treatment is modern, but the subject remains essentially the same." *J. A. Todd.*

Sheet Metal and Air Conditioning Contractors' National Association, Incorporated.

Manual of duct construction. The Association, 107 Center St., Elgin, Ill., $5.

Consulting engineer (New York), Feb. 1960, p.226. ⅛ col.

"A handbook for the sheet metal construction of ducts for heating and air conditioning systems, this manual is written primarily for the contractor. Construction methods and techniques, materials available and how used, typical problems and their solutions are some of the subjects covered. No specific engineering data is included . . . However, the consultant who is concerned with specifying in this field will find this a valuable reference."

Shultz, Earle, & Simmons, W.

Offices in the sky. 328p. 1959. Bobbs, Indianapolis, $6.

Engineering news-record, Jan. 28, 1960, p.152. ⅔ col.

"A well written, well researched history of the skyscraper from the early approaches to skeleton framing in Chicago to the latest office buildings in New York City . . . Not only traces developments in architecture and structural engineering, heating and plumbing as they occurred from about 1879 on, but also advances in building management. The authors credit the start toward modern skyscrapers to the Chicago fire of 1871 and the subsequent reconstruction. Skeleton framing was developed during the rebuilding of the city."

Simon, A.

Introduction to thermonuclear research. 182p. 1959. Pergamon, New York, $5.50.

Nuclear engineering, Jan. 1960, p.40. ⅔ col.

"A rewrite of lectures given at Oak Ridge National Laboratory and, as good lectures should be, is remarkably clear in exposition, fast in style, not too subtle, and with proper attribution for original ideas and work. Each argument is backed by, or deduced from, mathematical theory, which is not difficult for an engineer to follow . . . The way of advance seems long and costly, but the prize is great. The author has indicated the progress to date and where the difficulties lie, and in the space at his disposal he has done exceedingly well." *L. E. C. H.*

Nucleonics, March 1960, p.142. ⅛ col.

"Although based on lectures given in the fall of 1955, this text can provide a useful introduction to the problems of controlled fusion for those who have had no previous acquaintance with the subject. The energetics and cross sections of the fundamental fusion reactions are discussed along with the basic conditions for a fusion reactor . . . The properties of charged particles in magnetic fields are treated in general and then in the context of three specific types of machines, the Stellarator, the mirror machine and pinch devices. Finally, some of the problems of stability and of diffusion in a

magnetic field are considered. The treatment is not deeply mathematical, though this is a more quantitative book than, say, Bishop's Geneva review." *D. I. C.*

Smith, Robert Allan.
Semiconductors. 494p. 1959. Cambridge, New York. $12.50.

British communications & electronics, Feb. 1960, p.132. ¾ col.

"Although written primarily for the physicist, this comprehensive and excellent treatment of fundamental semiconductor principles will also be of great value to the research engineer. It can, in fact, be strongly recommended to anyone who wishes to acquire a thorough understanding of basic semiconductor physics. The material is presented throughout with systematic thoroughness and care, and at the same time in a very readable style. One feels that these qualities will soon make the book a classic in the field. As such, it will be invaluable as a fundamental textbook for the postgraduate and final year undergraduate student, whether following physics or electronic engineering interests." *A. R. Boothroyd.*

Electronic engineering, Feb. 1960, p.113. ⅘ col.

"An excellent source book for specialist workers, both physicists and engineers. Although there are no detailed theories of the physics of operation of semiconductor devices in it, the basic material will provide an up-to-date background for the understanding of such theories . . . A book of quality which can be warmly recommended." *F. J. Hyde.*

New scientist, Dec. 31, 1959, p.1260. 1½ col.

"Since the book is essentially of a theoretical character, much of the treatment is necessarily mathematical but the author has succeded admirably in relating this to the physics of the problems discussed. The mathematics used are within the grasp of the physics or electrical engineering graduate, but there are several places where a few extra lines of algebra would ease the reader's path . . . Will be of most value to the physics graduate who wishes to embark on a serious study of semiconductors. The basic theory is fully covered and an excellent guide to the very extensive literature is provided by brief summaries of original papers." *John Brown.*

Sortley, George, & Williams, D.
Principles of college physics. 898p. 1959. Prentice-Hall, Englewood Cliffs, N. J., $9.

American journal of physics, Feb. 1960, p.169. 1 col.

"Essentially a noncalculus version of the authors' well-known *Elements of Physics.* Some changes in order of topics have been made and all of the differentiation and integration removed. The authors do, however, retain the vocabulary and nomenclature of the calculus where it is important . . . Should be a very teachable book. The theory is presented with care; there are many worked-out example problems and more than 1300 problems for student exercises; the line drawings are uniformly excellent; and there are very few typographical errors . . . All in all this is an excellent book and should be well received by the teaching profession and students alike." *R. A. Goodwin.*

Soviet researches in fluorine chemistry 1949-1956. pt.1-3. 429p. 1959. Consultants Bureau, New York, $45.

Research applied in industry, Jan. 1960, p.40. ⅖ col.

"A collection of English translations of original papers on various aspects of fluorine chemistry, which appeared in Russian journals from 1949 to 1956 . . . Not a complete record of Soviet publications in the field in this period since not all journals are translated, but it is, nevertheless, a most useful compilation . . . These three volumes are most useful to English-speaking chemists interested in fluorine compounds. Russian work in the field is of increasing interest and importance, and to have their papers collected and translated is a very useful service . . . Though the price of the present work is high, it will be useful to all centres of fluorine chemistry in English-speaking countries." *J. C. Tatlow.*

Steward, F. C., ed.
Plant physiology. 6v. v.2. 758p. 1959. Academic Press, New York, $22.

New scientist, Jan. 14, 1960, p.104. ⅞ col.

"The treatment is such that it will appeal to the advanced and post-graduate student and to the research worker requiring information in unfamiliar fields . . . The several authors are, of course, authorities in the fields in which they write, and the expressed aims of the book seem to be admirably fulfilled . . . A wealth of information, much of which is brought together in this type of account for the first time, but the general impression is that the old problems formulated long ago about the mechanisms of movement of substances in and out of cells and throughout the plant still persist. It is a pity that the price is so high." *H. K. Porter.*

Soil science, Feb. 1960, p.116. ⅗ col.

"Intended . . . primarily for those engaged in plant physiology research and those interested in the status of our present knowledge of their particular phases of the subject. Each chapter, written by a skilled specialist in a given segment of plant physiology, contains a number of illustrations, mostly graphs and drawings, and a well-developed bibliography . . . Author, plant-name, and subject indexes are appended. Soil-plant scientists will find the Steward and Sutcliffe chapter on plants in relation to inorganic salts . . . of special interest and value."

Stigant, Stanley Austen.
Elements of determinants, matrices and tensors for engineers. 448p. 1959. Macdonald & Co., London, 60s.

Electrical review, Jan. 8, 1960, p.87. ⅗ col.

"This book, which has been written for students of electrical engineering, is in three parts, dealing with determinants, matrices and tensors. The theory in all three parts is correlated with the theory for the solution of sets of simultaneous equations, and the student is reminded of the importance of such equations in the analysis of the performance of polyphase

networks and machines. The elementary relationships existing between determinants, matrices and tensors are discussed at great length and simple applications are made to electrical problems. A student approaching the subject for the first time may find these detailed discussions the most valuable feature of the book, but a mathematician would probably find them tedious . . . Can be recommended to all those who are interested in the application of mathematics to electrical engineering . . . Well produced, the type is easy to read and the diagrams . . . are clearly constructed. *H. J. J.*

Engineer, Jan. 29, 1960, p.171. 1 col.

"Great care has been taken in all the parts of the book to present the subject matter clearly and simply, and every detailed step is given in the mathematical workings. The explanation is helped by a large number of worked examples. The clarity is further enhanced by the high standard achieved in the production. . . . The author has achieved his stated object of presenting an elementary conception of his chosen subjects. He has catered for the reader who wishes to start at the beginning, is not concerned with the formal aspects of the mathematics, and wants to use these mathematical tools for the solution of practical engineering problems."

Stubbs, Frank W., jr., ed.
Handbook of heavy construction. 1040p. 1959. McGraw, New York, $18.50.

Roads and engineering construction, Jan. 1960, p.116. ½ col.

"The work is written . . . to be of use to pretty well everyone in the construction business, including owner, consulting engineer and contractor. To me its real value is to the general contractor, who does not and cannot employ specialists in every field, but who might well want to bid on jobs of a nature with which he is not familiar . . . Could . . . also be of interest to consulting engineers, particularly in the initial estimate and feasibility report stage of a proposed job, and might even encourage the construction of more projects by helping to make the consulting engineer's preliminary estimate for the client more realistic and, therefore, less likely to scare the client off the idea of going ahead with it."

Sutton, G. P. See **Alperin,** Morton, & **Sutton,** G. P., ed.

Thomas, A. G., & **Rata,** P. J. H.
Aluminium busbar. 105p. Hutchinson, London, 21s.

Electrical journal, Jan. 22, 1960, p.256. ⅗ col.

"A comprehensive handbook on the design, construction and installation of aluminium and aluminium alloy busbar, and the authors claim that it contains a lot of information not previously published. Due to the paucity of information in the past it is suggested that the use of such material for busbars has not been as widespread as it might have been. We would add that this is perhaps not quite a true picture of the position since the Aluminium Development Association have published a considerable amount of information on the uses of aluminium in the electrical industry. A symposium on the subject was also recently held at the Institution of Electrical Engineers . . . We can thoroughly commend this book."

Electrical review, Feb. 12, 1960, p.296. ⅛ col.

"Published for the Northern Aluminium Co., Ltd., this volume is a comprehensive handbook . . . A comparatively unusual feature in a book of this type is a number of worked examples illustrating the application of the rating tables and graphs . . .Well produced on good quality paper and has clear illustrations; a comprehensive index and bibliography are included." *T. R. W.*

Timoshenko, Stephen P., & **Woinowsky-Krieger,** S.
Theory of plates and shells. Ed.2. 580p. 1959. McGraw, New York, $15.

Product engineering, Feb. 8, 1960, p.72. ¼ col.

"A thorough revision of one of Professor Timoshenko's advanced volumes. As before, it discusses the deformation of bodies in which one dimension (the thickness of a plate or shell) can be considered as small in comparison with the other dimensions. All material has been extensively revised in the light of the wealth of literature published in the field of plate and shell theory and design since 1940, when the first edition was published. Account is taken of new methods and new aspects that have gained ground in recent years, and of numerical results now available."

Troup, Gordon.
Masers. 168p. 1959. Methuen, London, 13s. 6d.

Research applied in industry, Jan. 1960, p.39. ⅗ col.

"An interest in the book . . . can be expected from microwave engineers as well as from physicists, to whom the Maser represents an extension of knowledge relating to the interaction between radiation and matter . . . The book is good value at a very reasonable price and comprises an adequate balance between basic theory and experimental practice. There are a few minor errors, not sufficiently important to detract from the value of the book . . . Some sympathy is due to the author for what seems a long lapse of time between his original treatise of January, 1958 and the date of publication in Autumn, 1959, particularly in the context of the rapid changes in this subject . . . Should appeal to quite a wide range of readers and is to be recommended." *C. R. Ditchfield.*

Turner, Francis J., & **Verhoogen,** J.
Igneous and metamorphic petrology. Ed.2. 694p. 1960. McGraw, New York, $12.

Oil and gas journal, Feb. 15, 1960, p.115. ⅗ col.

"Largely rewritten and includes recent developments in experimental petrology and geochemistry. The section on igneous petrology reflects the increased scope of the field and summarizes the important experimental work

that has been conducted in this area since 1954. Theoretical principles are stressed . . . and a rigorous treatment of thermodynamics is given where possible. Considerable space is devoted to the consideration of such fundamental principles as: the concepts of equilibrium and stability, the kinetics of chemical reaction, mechanisms of diffusion of matter in and between various media, and allied topics in the realm of physical chemistry."

Van Bergeijk, William A., and others.
Waves and the ear. 235p. 1960. Doubleday, Garden City, N. Y., $1.10 net. (Science study series.)

Science, Jan. 22, 1960, p.219. 3⅝ col. including other reviews.

"After an introductory section on sound as a means of communication . . . [the authors] discuss the physics of sound waves and devote two chapters to a review of the decibel system, wave phenomena in general, and sound waves in particular. In the middle section, the book shifts from pure physics into biophysics . . . The concluding sections touch upon sound production in animals and man and in high fidelity . . . Makes the reader very aware of how much is still unknown in each field, shares with him the excitement of examining still unanswered questions, but does this without neglecting the enormous achievements that have already been made." *Howard Laster.*

Vilbrandt, Frank C., & **Dryden,** C. E.
Chemical engineering plant design. Ed.4. 534p. 1959. McGraw, New York, $12.

Control engineering, Feb. 1960, p.178. ⅔ col.

"As one would expect in the fourth edition of a well known textbook, this is a polished piece of work. Indexing, references, and symbol tabulation are excellent, and the whole layout of the text is well planned . . . Each chapter is well organized, with many examples, and each follows naturally from the preceding one . . . A timely feature . . . is Chapter 10, Nuclear Chemical Plant Design. To the best of the reviewer's knowledge, this is the first attempt to place directly in the chemical engineer's hands a text on this subject. Coverage is thorough enough (43 pages) to serve as an adequate introduction to the subject, and 91 references cover most of the standard sources. The health physics coverage is good, and may useful formulas and charts are presented."

Von Reimer, Vinzenz.
Druckguss. 298p. 1959. Hanser, Munich, Germany, DM 38.

Journal of the Institute of Metals, Nov. 1959, *metallurgical abstracts,* p.220. ¼ col.

"Written by an eminently practical man for essentially the same type of reader. In this respect, the book is likely to be successful, in view of its balanced qualities—good planning, concise writing, and excellent illustrations. Its failure is mainly that it is not likely to contribute towards better appreciation by 'non-pressure-die-casters'. Evidently a major effort will be required to put pressure die-casting on the reading list of metallurgists and research men. All essential practical aspects of pressure die-casting are satisfactorily dealt with." *V. Kondic.*

Ward, Henry Baldwin, & **Whipple,** G. C.
Fresh-water biology. Ed.2; edited by W. T. Edmondson. 1248p. 1959. Wiley, New York, $34.50.

Science, Jan. 29, 1960, p.296. 1⅝ col.

"The general organization of the first edition has been followed; that is, each chapter is written by a specialist and is devoted to a particular taxonomic group. The material consists mainly of illustrated keys to those fresh-water forms found north of the Rio Grande . . . Although specialists will disagree on matters of emphasis and taxonomy, there will be no argument as to the care and labor involved in the preparation of the book. Edmondson has done aquatic biology a great service in providing direction and stimulus for 50 other specialists in the preparation of the compilation, and in editing their efforts. The high price is most unfortunate." *Robert W. Pennak.*

Webster, George C.
Nitrogen metabolism in plants. 152p. 1959. Row, Evanston, Ill., $3.50.

Forest science, March 1960, p.10. 1 col.

"The author has confined his review to four phases of nitrogen metabolism: nitrogen nutrition, amino acid metabolism, biosynthesis of amides and peptides, and protein and nucleic acid metabolism . . . Would not be easy reading for many foresters. But it will accomplish what the author intends it to do—provide information on current progress for research workers outside this particular field, education for new workers in the field, and a basis for reexamination of ideas for those already in the field." *H. A. Fowells.*

Wells, T. A. G.
Three vertebrates. 142p. 1959. Heinemann, London, 12s. 6d. net.

Science progress, Jan. 1960, p.174. ⅔ p.

"Sets out to be a young dissecter's *vade mecum,* one of a long succession of such works stemming from the classic Marshall and Hunt. Unlike the latter, however, it rarely offers precise instructions on the detailed operations of the dissections of the three types with which it is concerned, the dogfish, frog and rabbit (with notes on the rat). The student is advised to consult other text-books liberally. For the teacher shaky on his detailed anatomy, or the student cramming for a junior examination, this is probably a useful book. It sets out frankly to show how to pass a practical examination, which is something all students must learn. It is unfortunate that this method of treatment has virtually precluded any funtional interpretation, to which scant attention is paid." *L. A. Harvey.*

West, J. R. See **Duecker,** Werner W., & **West,** J. R., ed.

Wilkins, R. G. See **Lewis,** J., & **Wilkins,** R. G., ed.

Williamson, G., & **Payne,** W. J. A.
Introduction to animal husbandry in

the tropics. 448p. 1960. Longmans, New York, $10.

The Times science review, Spring 1960, p.18. ⅛ col.

"The authors . . . have attempted the immense task of covering the effects of climate, nutrition and management on livestock of many kinds and breeds in conditions which vary widely, while finding space also for breeding, foodstuffs and the prevention of disease. They are well qualified for their task, well aware of its difficulties, and their comments, when made, are shrewd . . . Should do much to encourage the application of knowledge already available, and also the right kind of interest."

Willmore, T. J.

Introduction to differential geometry. 317p. 1959. Oxford, New York, $5.60.

New scientist, Jan. 21, 1960, p.158. ⅞ col.

"Though the book is an 'introduction' and does not deal at any length with modern developments in the subject, there are many forward looking passages which explain in simple terms some of the important modern ideas. And, although analytic techniques are employed throughout, the reader is never allowed to lose sight of the fact that the subject matter is geometrical . . . While this is not a book to be read by anyone without a competent mathematical technique, it should prove stimulating to a mature mathematical undergraduate, and bring him face to face, as few undergraduate texts are able to do, with ideas that are in the front line of modern mathematics." *J. A. Todd.*

Wilson, Allen C.

Industrial thermal insulation. 295p. 1959. McGraw, New York, $9.

Factory, Feb. 1960, p.227, 229. ⅝ col.

"Designed to help the plant and maintenance engineer solve industrial insulation problems at all temperature levels . . . Covers every phase of insulation—piping, equipment, and structures. Deals with sub-freezing temperatures as well as those up to 2000 F. Includes chapters on principles, economics, materials, and application methods. Case studies of 26 typical applications covering a variety of plant equipment and utilities illustrate the author's points . . . Clears up such questions as: How should I insulate my underground pipe line? Why do I need a vapor barrier? And why is optimum thickness of insulation from the heat return per dollar standpoint not necessarily the most economical?" *Warren J. King.*

Wisler, Chester O., & **Brater,** E. F.

Hydrology. Ed.2. 408p. 1959. Wiley, New York, $9.25.

Agricultural engineering, Jan. 1960, p.59. ⅛ col.

"Two new chapters have been added to this second edition—one deals with the hydrology of semi-arid basis, and the other treats the effects of snow upon the hydrology of an area. Solutions to such field problems as: Determination of spillway and bridge discharge capacities; methods of flood reduction; water conservation practices; evaluation of potential water power on a river; and evaluation of amount of water available for water supply or waste disposal on a river are also covered . . . Included in its new material, this text book gives the description of a dependable method for determining the magnitude of floods at specified rare frequencies."

Journal of forestry, March 1960, p.227. 1⅜ col.

"The first edition . . . was a good book. This second edition, in some respects, is even better . . . The authors are most at home in their chapters dealing with analysis of streamflow data. They are less certain in discussing soil and vegetation influences. Engineering terms crop up in odd places . . . A few . . . questionable statements suggest that engineer-hydrologists are still not altogether familiar with the forestry and soil aspects of this field. In time a text may be written that will delineate forest hydrology and its applications to forest watershed management. Until forester-hydrologists have the knowledge to prepare a text we must seek our hydrology in books such as this, and in so doing, learn." *Howard W. Lull.*

Soil conservation, March 1960, p.188. ⅜ col.

"The fundamentals of hydrology are well explained . . . The infiltration and unit hydrograph theories are used as basic tools. Working methods are given for use with rainfall, soil moisture, ground water, runoff, and stream gaging. Water losses are given a separate chapter, while the differing viewpoints of agriculturists and downstream river engineers are fairly treated. The effects of soil and vegetation on runoff are given more emphasis than usually found in hydrology textbooks . . . Its use as a classroom text should not be taken as a sign of a dry-as-dust approach. While the book is technically sound, it is very readable." *Victor Mockus.*

Woolf, Harry.

Transits of Venus; a study of eighteenth-century science. 258p. 1959. Princeton Univ. Press, Princeton, N. J., $6.

Journal of the Franklin Institute, Jan. 1960, p.65. ⅝ col.

"A staggering volume of research by the author went into this work . . . The book rings with authority . . . While essentially this book is the record of preparations of the various expeditions for the two transits the author weaves a fascinating story in which are included the adventures of the various groups. The historian's touch, a most pleasant treatment in this type of book, is apparent throughout. Professor Woolf is to be congratulated on authoring a classic treatment on the derivation of one of the fundamental units in astronomy . . . Will appeal to both the historian and the astronomer." *I. M. Levitt.*

Science, March 11, 1960, p.723. 1¾ col.

"Although the book could have contained more discussion of science from the inside, Woolf has done such a monumental job of editing, collecting, and commenting from the historical outside, upon the original sources related to this episode of science that he shall forever have our thanks and our heartfelt praise for his labors." *Derek J. deSolla Price.*